Exploring Qualitative Data from Cognitive Interview Studies with Paired Participants to Understand the Accuracy of Proxy Reporting

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Proxy Reporting

- Proxy reporting is a method used to collect data on all household members to save time, costs (Boehm, 1989)
- Extensive research on the ability of self-respondents and proxy-respondents to provide matching responses
  - More research in recent years on paired cognitive interviewing to determine feasibility of survey questions being asked of a proxy respondent (Holzberg et al., 2019) (Zuckerbraun et al., 2020)
- Purpose of this research was to learn more about how participants from paired cognitive interviews answer questions about other household members
  - (1) whether perception of question task affects participants' answers matching
  - (2) what participant characteristics may influence match rate

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Research Questions

1. Can qualitative data such as participant's level of confidence and perceived question difficulty inform why some pairs of participants correctly match with each other more often?
   - Are there any cognitive strategy differences in how they formulate a proxy response?
2. Can demographic data, such as household member relationship and education level, inform why some pairs of participants correctly match with each other more often?

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Background

- Tested two Current Population Survey supplements for which we conducted paired cognitive interviewing:
  - Civic Engagement & Volunteerism (CEV)
  - Computer and Internet Use (CIU)
- Wanted to examine feasibility of asking for a proxy response
- Pairs of participants were interviewed in the Washington, D.C. and Philadelphia metro areas in 2016 and 2017
- Sponsors of research
  - Bureau of Labor Statistics
  - Corporation for National and Community Service
  - National Telecommunications and Information Administration

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Methods (1)

- Ranked the questions by adding the number of correct matches between self-respondent and proxy respondent
- Analyzed questions that were in the middle range of correct match rate
- Eight CEV questions (5 Yes/No, 3 Scalar)
  - Group membership/Volunteer and neighborhood activities
  - Involvement in local or political activities (e.g., posting about politics on social media, buying products based on political values, attending a public meeting)
  - Interactions with other people (e.g., other people in neighborhood, people from a different racial, ethnic, or cultural background)
- Seven CIU questions (7 Yes/No)
  - Social media usage
  - Downloading music/video calling
  - Online classes/job training
  - Using services through Internet (e.g., Lyft, Uber, etc.) or providing services/selling goods

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Methods (2)

- Examined the qualitative open-ended responses to probing questions about answering for other household members
- Coded as:
  - Participant said a question/question set was easy to answer and/or they were confident answering
  - Participant said a question/question set was difficult to answer and/or they weren't confident answering

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Methods (3)

- Ranked the pairs for each survey by adding up the number of correct responses between the self-respondent and proxy respondent
- Analyzed the pairs with highest match rates and lowest match rates

	Higher Ranking Pairs	Lower Ranking Pairs
CEV	7	6
CIU	5	5
Total	12	11

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Results

	Total Match Rate		Match Rate for pairs that were confident/found question(s) easy		Match Rate for pairs that were not confident/found question(s) difficult	
	Higher Ranking	Lower Ranking	Higher Ranking	Lower Ranking	Higher Ranking	Lower Ranking
CEV	79 % (88/112)	46 % (44/96)	86 % (63/73)	56 % (36/64)	56 % (9/16)	30 % (6/20)
CIU	86 % (60/70)	61 % (43/70)	89 % (41/46)	66 % (39/59)	82 % (14/17)	40 % (4/10)
Total	81 % (148/182)	52 % (87/166)	87 % (104/119)	61 % (75/123)	70 % (23/33)	33 % (10/30)

- Higher ranking pairs had higher match rates for 14 of the 15 questions across both surveys
- Among pairs who were confident in their answer or found question easy, higher ranking pairs had higher match rates for 13 of the 15 questions
- Higher and lower ranking pairs did not seem to differ in terms of being confident in their answers or finding questions easy to answer

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How did participants come up with their answer?

Higher ranking pairs

- At least one person in multiple pairs mentioned they participated in some of these activities with the other household member
- If household members do activities together or at least see the other person engage in activities, recall would be easier

Lower ranking pairs

- Pairs of participants did not mention doing activities together as often
- More of these participants seemed to be basing their answers on their general knowledge on what they observed or their conversations with the other person

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Does household relationship matter?

Higher Ranking Pairs	Lower Ranking Pairs
Seven Related Pairs • Opposite Sex Spouse/Opposite Sex Unmarried Partner (4) • Parent/Child (2) • Other relative (1)	**Five Related Pairs** • Opposite Sex Unmarried Partner (2) • Parent/Child (2) • Grandchild/other relative (aunt, uncle, cousin, in law) (1)
Five Unrelated Pairs • Housemate/Roommate (5)	**Six Unrelated Pairs** • Housemate/Roommate (5) • Other non-relative (1)

- We found no evidence that relationship among pairs was associated with high or low match rate

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Does education matter?

Higher Ranking Pairs	Lower Ranking Pairs
Ten Pairs with at least one participant having Master's or Bachelor's • Master's-Master's (1) • Master's-Bachelor's (3) • Master's-Some college (1) • Master's-High school degree (1) • Bachelor's-Bachelor's (3) • Bachelor's-High school graduate (1)	**Seven Pairs with at least one participant having Master's or Bachelor's** • Master's-Bachelor's (2) • Master's-Associate's (1) • Bachelor's-Bachelor's (1) • Bachelor's-Associate's (1) • Bachelor's-Some college (1) • Bachelor's-High school graduate (1)
Two Pairs with neither participant having Master's or Bachelor's • Associate's-Some college (1) • Some college-High school graduate (1)	**Four Pairs with neither participant having Master's or Bachelor's** • Associate's-High school graduate (1) • Some college-High school graduate (1) • Some college-12th grade, no diploma (1) • High school graduate-12th grade, no diploma (1)

- We found weak evidence that education was associated with a high or low match rate

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Conclusion

- Self-reported levels of confidence and perceptions of question difficulty did not seem to affect whether or not the pair reported matching answers
- Some evidence from open-ended questions that participant behavior mattered (e.g., doing similar activities with other household members)
- No evidence that relationship among pairs affected whether or not their answers matched but this could vary by survey topic
- Weak evidence that higher education level may be associated with higher match rates
- This research was limited to only topic areas we studied but wanted to fill in the gap how perception of question task and participant characteristics may affect match rates

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Thank you!

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